mounted on one surface of said cantilever and during scanning said stylus intermittently contacts said sample.

7. The scanning force microscope of claim **1** further including a sample where said sample and said cantilever are immersed in a fluid during scanning.

8. The scanning force microscope of claim **1** further including adjusting means where said adjusting means alters the position of said cantilever relative to said light source.

9. The scanning force microscope of claim **1** where said illuminator assembly is slidably removable from said scanning means.

10. A scanning force microscope comprising:

(a) a light source for creating a light beam,

(b) a cantilever which reflects said light beam resulting in an at least partially reflected light beam,

(c) an illuminator assembly comprising said light source, said cantilever, and containing at least one device selected from the group consisting of lenses, mirrors, and prisms, and

(d) scanning means for moving said illuminator assembly relative to a sample; where said illuminator assembly is attached to and, removable from, said scanning means.

11. The scanning force microscope of claim **10** further including extraction means where said illuminator assembly is removable from said scanning means by said extraction means.

12. The scanning force microscope of claim **10** where said scanning means consists of at least one piezoelectric tube.

13. The scanning force microscope of claim **10** further comprising adjustment means where at least one device in said illuminator assembly is adjustable such that said light beam can be adjusted to impinge on said cantilever.

14. The scanning force microscope of claim **10** further including a beam sizing lens which changes the diameter of said at least partially reflected light beam.

15. The scanning force microscope of claim **10** further including a light beam position detector where said light beam position detector includes at least two light detecting devices.

16. The scanning force microscope of claim **15** further including means for oscillating said cantilever and where said light beam position detector senses a change in said partially reflected beam where said change results from oscillations of said cantilever.

17. The scanning force microscope of claim **10** where said cantilever is immersed in a fluid during scanning.

18. The scanning force microscope of claim **10** where said illuminator assembly is slidably removable from said scanning means.

19. The scanning force microscope of claim **10** where said illuminator assembly is fastened to said scanning means by means of a spring loaded device.

20. The scanning force microscope of claim **10** further including a lens where said lens brings said light beam to a focus approximately at said cantilever.

21. The method of changing a cantilever of a scanning force microscope comprising the steps of:

(a) removing an illuminator assembly from scanning means of said scanning force microscope,

(b) removing said cantilever from said illuminator assembly,

(c) installing a replacement cantilever in said illuminator assembly, and

(d) installing said illuminator assembly into said scanning means of said scanning force microscope.

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